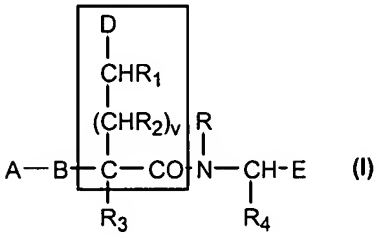
Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the above-referenced application.

Listing of Claims:

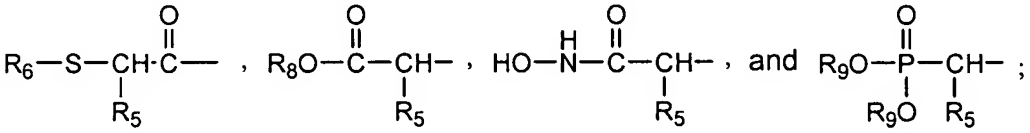
1. (Previously presented) A compound of Formula (I), or a pharmaceutically acceptable salt thereof:



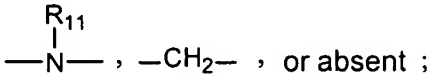
(I)

wherein:

A is a zinc ligand or zinc ligand bearing moiety selected from the group consisting of:



B is



R is hydrogen or lower alkyl;

R_1 is hydrogen or lower alkyl;

R_2 is hydrogen, or lower alkyl;

R_3 is hydrogen or lower alkyl;

R_4 is lower alkyl, substituted lower alkyl, cycloalkyl-$(CH_2)_w$-, aryl-$(CH_2)_w$-, substituted aryl –$(CH_2)_w$- or heteroaryl-$(CH_2)_w$-;

R_5 is hydrogen, lower alkyl, substituted lower alkyl, cycloalkyl-$(CH_2)_x$-, aryl-$(CH_2)_x$-, substituted aryl-$(CH_2)_x$-, or heteroaryl-$(CH_2)_x$-;

R_6 is hydrogen;

R_8 and R_9 are hydrogen;

R_{11} is hydrogen or lower alkyl;

D is –COOH;

E is hydrogen, -COOH, -$CONH_2$, -CONH(lower alkyl), -CON(lower alkyl)$_2$, -CO-NH(CH)$CH_2OHCOOH$, -CH_2COOH, CH_2OH, -CH_2CH_2OH, or –$COOR_{16}$;

R_{16} is as previously defined for R_8 and R_9;

C is carbon;

H is hydrogen;

O is oxygen;

N is nitrogen;

S is sulfur;

P is phosphorus;

v is zero or one;

w is zero or an integer ranging from 1 to 4; and

x is an integer ranging from 0 to 4;

with the provisos that when "A" is $R_8O(CO)CHR_5$-, R, R_1, R_3, R_5 and E are H, B is absent, D is –COOH, v is 0, and R_4 is naphthyl; that when "A" is HO-$NHCOCHR_5$-, R_4 may not be carboxymethyl [-CH_2COOH]; and that when "A" is $(R_9O)_2POCHR_5$-, R, R_1, R_3 and R_9 are H, R_4 is 3-indolylmethyl, R_5 is 2-phenylethyl, B is NH, D and E are –COOH and v is 0.

2. (Previously presented) The compound as defined in claim 1, which is:

N-[1-Carboxy-2-(1H-indol-3-yl)-ethyl]-3-(2-mercapto-acetylamino)- succinamic acid;

N-[1-Carboxy-2-(1H-indol-3-yl)-ethyl]-3-(2-mercapto-3-phenyl-propionyl amino)-succinamic acid;

N-[1-Carboxy-2-(1*H*-indol-3-yl)-ethyl]-3-(2-mercapto-propionylamino)-succinamic acid;

N-[1-Carboxy-2-(1*H*-indol-3-yl)-ethyl]-3-(2-mercapto-4-methyl-pentanoylamino)-succinamic acid;

N-[1-Carboxy-2-(1*H*-indol-3-yl)-ethyl]-3-(2-mercapto-3-methyl-butyrylamino)-succinamic acid;

N-[1-Carboxy-2-(1*H*-indol-3-yl)-ethyl]-3-(3-hydroxy-2-mercapto-propionylamino)-succinamic acid;

N-[1-Carboxy-2-(1*H*-indol-3-yl)-ethyl]-3-(3-hydroxy-2-mercapto-butyrylamino)-succinamic acid;

N-[1-Carboxy-2-(1*H*-indol-3-yl)-ethyl]-3-(2-mercapto-hexanoylamino)-succinamic acid;

N-[1-Carboxy-2-(1*H*-indol-3-yl)-ethyl]-3-(2-mercapto-4-phenyl-butyrylamino)-succinamic acid;

N-[1-Carboxy-2-(1*H*-indol-3-yl)-ethyl]-3-(2-mercapto-2-phenyl-acetylamino)-succinamic acid;

3-(3-Biphenyl-4-yl-2-mercapto-propionylamino)-*N*-[1-Carboxy-2-(1*H*-indol-3-yl)-ethyl]-succinamic acid;

3-(3-(4-Benzyloxy-phenyl)-2-mercapto-propionylamino)-*N*-[1-Carboxy-2-(1*H*-indol-3-yl)-ethyl]-succinamic acid;

N-[1-Carboxy-2-(1*H*-indol-3-yl)-ethyl]-3-[3-(4-fluoro-phenyl)-2-mercapto-propionylamino]-succinamic acid;

N-[1-Carboxy-2-(1*H*-indol-3-yl)-ethyl]-3-[2-mercapto-3-(4-methoxy-phenyl)-propionylamino]-succinamic acid;

N-[1-Carboxy-2-(1*H*-indol-3-yl)-ethyl]-3-(3-cyclohexyl-2-mercapto-propionylamino)-succinamic acid;

N-[1-Carboxy-2-(1*H*-indol-3-yl)-ethyl]-3-[3-(1*H*-indol-3-yl)-*2*-mercapto-propionylamino]-succinamic acid;

N-[1-Carboxy-2-(1*H*-indol-3-yl)-ethyl]-3-(2-mercapto-3-naphthalen-2-yl-propionylamino]-succinamic acid;

N-(1-Carboxy-2-naphthalen-2-yl-ethyl)-3-(2-mercapto-3-phenyl propionylamino)-succinamic acid;

N-(1-Carboxy-2-hydroxy-ethyl)-3-(2-mercapto-3-phenyl-propionyl amino)-succinamic acid;

N-[1-Carboxy-2-(4-hydroxy-phenyl)-ethyl]-3-(2-mercapto-3-phenyl-propionylamino)-succinamic acid;

N-[1-Carboxy-2-phenyl-ethyl)-3-(2-mercapto-3-phenyl-propionyl amino)-succinamic acid;

N-(2-Biphenyl-4-yl-1-Carboxy-ethyl)-3-(2-mercapto-3-phenyl-propionyl amino)-succinamic acid;

N-(1-Benzyl-2-hydroxy-ethyl)-3-(2-mercapto-3-phenyl-propionyl amino)-succinamic acid;

N-[1-Carboxy-2-(1*H*-indol-3-yl)-ethyl]-3-(2-mercapto-3-phenyl-propionylamino)-succinamic acid;

4-[1-Carboxy-2-(1*H*-indol-3-yl)-ethylcarbamoyl]-4-(2-mercapto-3-phenyl-propionylamino)-ethyl]-butyric acid;

N-[2-(1*H*-indol-3-yl)-methylcarbamoyl-ethyl]-3-(2-mercapto-acetyl amino)-succinamic acid;

N-[1-(1-Carboxy-2-hydroxy-ethylcarbamoyl)-2-(1*H*-indol-3-yl)-ethyl]-3-(2-mercapto-3-phenyl-propionylamino)-succinamic acid;

N-[2-(1*H*-indol-3-yl)-methoxycarbonyl-ethyl]-3-(2-mercapto-acetyl amino)-succinamic acid;

N-[2-(1*H*-indol-3-yl)l-ethyl]-3-(2-mercapto-3-phenyl-propionylamino)-succinamic acid;

3-(2-Biphenyl-4-yl-ethylcarbamoyl)-4-hydroxycarbamoyl-butyric acid;

3-[2-(4'-Cyano-biphenyl-4-yl)-ethylcarbamoyl]-4-hydroxycarbamoyl-butyric acid;

4-Hydroxycarbamoyl-3-[2-(4-pyridin-2-yl-phenyl)-ethylcarbamoyl]-butyric acid;

4-Hydroxycarbamoyl-3-(4-phenyl-butylcarbamoyl)-butyric acid;

3-[2-(4'-Hydroxy-biphenyl-4-yl)-ethylcarbamoyl]-4-hydroxycarbamoyl-butyric acid;

3-(2,2-Diphenyl-ethylcarbamoyl)-4-hydroxycarbamoyl-butyric acid;

3-[2-(4'-Dimethylamino-biphenyl-4-yl)-ethylcarbamoyl]-4-hydroxycarbamoyl-butyric acid;

3-[(Biphenyl-4-ylmethyl)-carbamoyl]-4-hydroxycarbamoyl-butyric acid;

3-(2-Biphenyl-4-yl-ethylcarbamoyl)-5-hydroxycarbamoyl-pentanoic acid;

N-[1-carboxy-2-(1H-indol-3-yl)-ethyl]-3-(3-phenyl-1-phosphono-propylamino)-succinic acid; or

3-(2-Naphthalen-2-yl-ethylcarbamoyl)-pentanedioic acid.

3. (Previously presented) The compound of claim 2, which is 3-(2-Biphenyl-4-yl-ethylcarbamoyl)-4-hydroxycarbamoyl-butyric acid.

4. (Previously presented) A pharmaceutical composition comprising a therapeutically effective amount of a compound of any one of claims 1 to 3 and a physiologically acceptable carrier or excipient.

5. (Previously presented) A method for inhibiting PHEX comprising contacting PHEX with an inhibitory amount of a compound as recited in any one of claims 1 to 3.

6. (Previously presented) A method for stimulating bone mass formation in a mammal comprising inhibiting PHEX with an effective amount of a compound as recited in any one of claims 1 to 3.

7. (Previously presented) A method for treating or preventing a disease or condition associated with a phosphate metabolism defect comprising administering an effective amount of a compound as recited in any one of claims 1 to 3 to a mammal in need thereof.

8. (Previously presented) A method as recited in claim 7, wherein said disease or condition is selected from the group consisting of hyperphosphatemia, hyperparathyroidism and renal insufficiencies.

9. (Previously presented) A method for identifying PHEX substrates comprising

contacting a candidate with PHEX in the presence and in the absence of a compound as recited in any one of claims 1 to 3; and

assessing PHEX biological activity on the candidate in the presence and in the absence of the compound,

wherein the candidate compound is selected as a PHEX substrate when PHEX biological activity is measurably higher in the absence versus in the presence of the compound.

10-14. (Cancelled)